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- (71) Applicant (for all designated States except US): **THE SCRIPPS RESEARCH INSTITUTE** [US/US]; 10550 North Torrey Pines Road, La Jolla, CA 92037 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **ANDERSON, Christopher, J.** [US/US]; 124 Mason St., Apt.401, San Francisco, CA 94102 (US). **SCHULTZ, Peter, G.** [US/US]; 1650 La Jolla Ranch Road, La Jolla, CA 92037 (US). **SANTORO, Stephen** [US/US]; 10 Shady Hill Square, Cambridge, MA 02138 (US).
- (74) Agents: **QUINE, Jonathan, Alan** et al.; Quine Intellectual Property Law Group, P.C., P.O. Box 458, Alameda, CA 94501 (US).

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(54) Title: COMPOSITIONS OF ORTHOGONAL GLUTAMYL-TRNA AND AMINOACYL TRNA SYNTHETASE PAIRS AND USES THEREOF

(57) Abstract: Compositions and methods of producing components of protein biosynthetic machinery that include glutamyl orthogonal tRNAs, glutamyl orthogonal aminoacyl-tRNA synthetases, and orthogonal pairs of glutamyl tRNAs/synthetases are provided. Methods for identifying these orthogonal pairs are also provided along with methods of producing proteins using these orthogonal pairs.

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